

ABSTRACT OF THE DISCLOSURE

5 Methods and apparatus for broadcasting high quality audio "studio
direct" with the same digital information employed in the studio by the video
producer with AC-3 digital audio signals for broadcast to integrated receiver
decoders (IRD). The methods and apparatus permit proper handling of AC-3 data
by switching signals to encoders in response to detection of the encoded signals
representing compression of the data. Control over individual data bits such as
10 copyright bits is maintained by determining the bit status, comparing it to a preferred
status, changing the status if it does not comply with the preferred status, and
reevaluating cyclical redundancy check value in each data packet to avoid disruption
in the data transmission. In addition, the system includes an uplink device which
automatically checks, logs and reports errors in Dolby Digital AC-3 signals by a
15 monitor which employs a processor, a digital audio card and an SMPTE timecode
reader. As an option, an ethernet interface may be provided to permit AC-3
transmission to expedite storage and transmission of the audio data by media such as
compact disks. The monitor employs a state machine that finds AC-3 packets, locks
into the packets and detects discontinuities or loss of signal. The monitor then
20 computes and checks the cyclical redundancy check value of the AC-3 packet found.
In addition, the system enables the device to play AC-3 signals such as Dolby Digital
out in sync with video signals, regardless of the storage media for the files. A sound
card having an input for receiving house reference AES clock pulses enables the AES
clock of the playback signal to be locked to the frequency of a production house
25 master as a time code reader or an editor's contact closure match video and audio
signals playback.